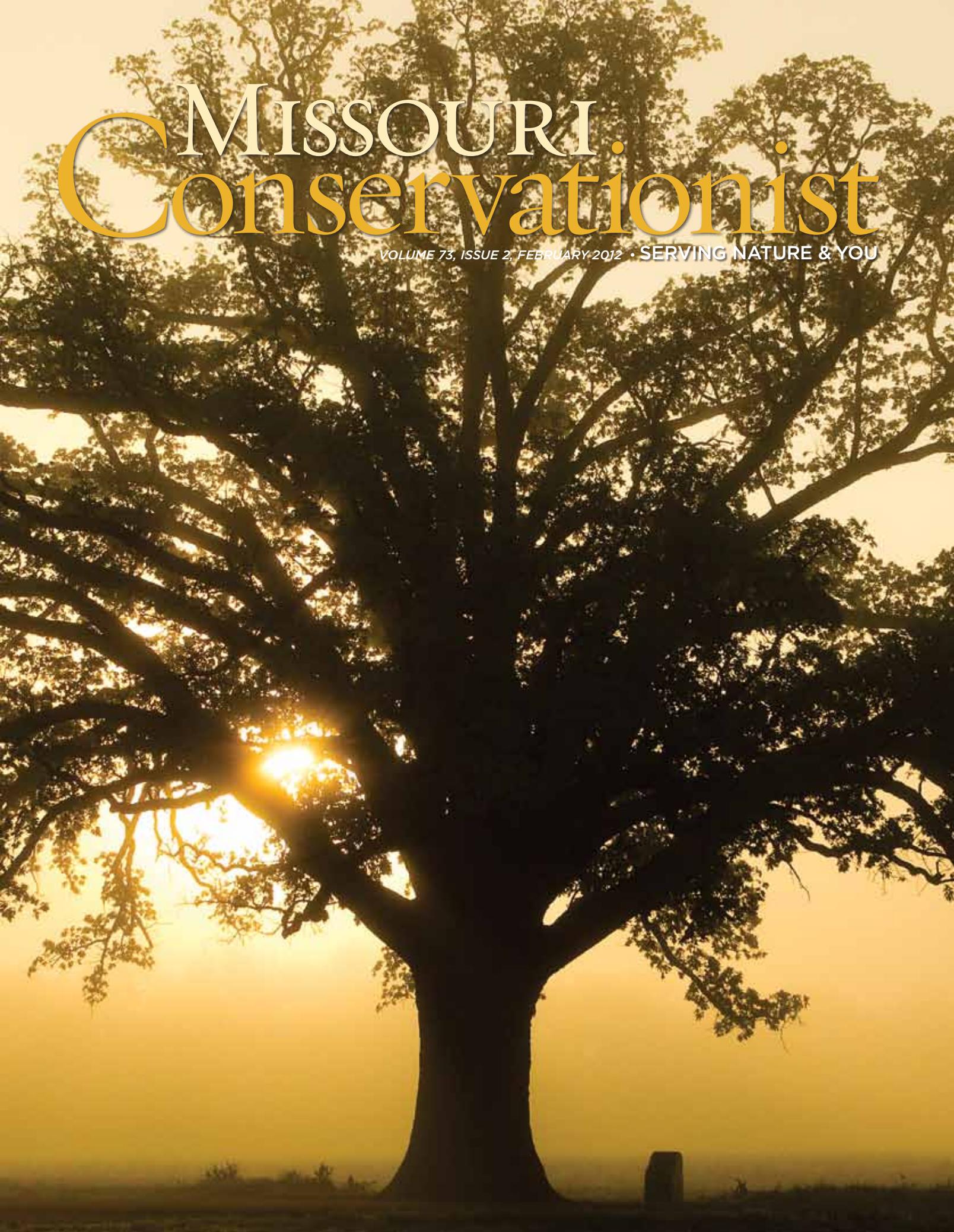


MISSOURI Conservationist

VOLUME 73, ISSUE 2, FEBRUARY 2012 • SERVING NATURE & YOU



Conservationist Highlights

Missourians have led the state's conservation effort for generations and they continue to be conservation leaders today. This month, the *Conservationist* highlights Chelsey Kroese, a high school

student who interned on a black bear project. Chelsey helped measure bear dens, in addition to many other research duties, and she co-authored the article on Page 22. University of Missouri graduate student Alicia Burke is featured in the "I Am Conservation" segment (back cover). Alicia's work with neotropical birds is helping the Department learn about the unique interconnectivity of forest ecosystems. Alicia represents Missouri at its best as she served eight years in the United States Navy and one of her life goals is to be a wildlife biologist on a military base.

Help us celebrate the Department's 75th anniversary by participating in the photo contest (Page 8). Entries in seven different categories will be accepted through May 15. Missourians will select the "Best of Show" photograph from the seven winners. All the winners will be highlighted in the October issue of the magazine. The Department regularly receives outstanding photographs from Missourians and their outdoor adventures, so dust off those cameras and send us your best shots!

Enjoy this issue's 75th anniversary article: *Healthy Forests for Generations* (Page 10). The article walks us through the abundance to ashes period of Missouri's forest history and then back to abundance today, which is due to citizen involvement. From the late 1800s and early 1900s, which produced millions of railroad ties, to the Showboat era of informing and educating people, to the firefighting era, to today's sustainable forest products industry, Missouri forests are a resilient, renewable resource. Today's Missouri forests support 41,200 jobs and contribute \$7.3 billion to Missouri's economy.



Healthy forests for future generations are vital to Missouri's economy and quality of life. They are sustainable resources that can be managed in perpetuity.

Healthy forests provide:

- Clean water.
- Clean air.
- Livable communities.
- Wood products & jobs.
- Habitat for wildlife.

Healthy forests need to be renewed. Careful harvesting of mature and overcrowded trees renews the forest, creating the next generation of woods. Managing public and private forests through science helps conserve woodlands for future generations, create jobs and enhances Missouri's economy.

Foresters and citizens have worked side by side to

improve Missouri's forests on both private and public land. The Department is better equipped today to manage Missouri's forests with improved scientific knowledge. Our staff is building on the hard work and enthusiasm of past foresters to ensure Missouri continues to enjoy healthy and sustainable forests.

Missouri's conservation future is bright with students like Chelsey Kroese and Alicia Burke helping us learn more about our state's natural resources. Missouri citizens have worked together to create a conservation legacy admired and copied around the world. As Missouri citizens work toward conservation goals, our collective natural resource future rests on making informed, science-based conservation decisions that enhance our quality of life, economy and state.

Tim D. Ripperger, deputy director



FEATURES

8 Photo Contest

The Missouri Department of Conservation invites you to enter our 75th Anniversary Photo Contest.

10 Healthy Forests for Generations

by Brett Dufur

The Conservation Department was created by a citizen-led effort to restore Missouri's fish, forests and wildlife 75 years ago. This is the story of how Missourians have worked together to improve our forests to benefit wildlife and people, for generations to come.

18 Regulations 2012 Update

22 Does a Bear Den in the Woods?

by Chelsey Kroese and Jeff Beringer

An intern's-eye-view of Missouri bears' home lives.

Cover: Missouri's largest Bur Oak Tree located near Eagle Bluffs Conservation Area near Columbia by Noppadol Paothong

Above: Busiek State Forest and Wildlife Area near Springfield by Noppadol Paothong.

MISCELLANY

2 Letters

4 News & Events

5 Ombudsman

28 Plants and Animals

30 Places To Go

32 Hunting and Fishing Calendar

32 Contributors

MISSOURI ADVENTURES

Since moving to Alaska from Missouri decades ago, I've hunted for Dall sheep, grizzly, caribou, and moose. None of those hunts were any more exciting than the last-light buck on my brother's farm in Weatherby last month, or our duck hunt near Macon. The quality of the hunting experiences offered by the Show-Me state rival those of anywhere in the country. I was glad to be back. Mr. Paothong's stunning photos in the December issue of *Missouri Conservationist* were a pleasure as well.

John D. Erkmann M.D., Anchorage, AL

Thanks so much for a great magazine! Thanks especially for helping us make some wonderful family memories from your article about Hughes Mountain Conservation Area ["Places to Go"; September].

My husband and I, our 16-year-old daughter, with boyfriend in tow, and our 8- and 6-year-

old grandsons, Ashton and Quentin, enjoyed a gorgeous fall day one Saturday in October with a hike up Hughes. We found the view spectacular.

As we were getting out of the car in the parking area, another vehicle pulled in and a couple eagerly asked if this "was the right place for the hike." I laughed and told them they must have seen the article in the *Conservationist*, too. They had.

We live only 45 minutes away and never realized what grandeur was almost in our back yard. Keep sharing!

Pam CoxWilliams, Lonedell

My wife, Sherry, daughters Amber, 15, and Emily, 13, and I really appreciate the work that you all do to make the *Missouri Conservationist* magazine one of the best magazines printed. We look forward to the new issue arriving every month. Our family enjoys the Missouri outdoors, be it boating, camping, fishing, hiking and hunting.

So, with that said, we would also like to extend our appreciation to MDC's work that helps make these experiences some of the best life can offer and to ensure future generations' enjoyment of these activities as well.

Nov. 6, 2011, I took my daughter Emily out for her first youth gun season, and I am proud to say she was successful in taking a 9-point buck off a friend's land in northern Ste. Genevieve County. Thanks again for providing Missourians opportunities like this that help promote and pass on to our younger generations the wonderful gift of conservation.

Chad Roth, Ste. Genevieve

WINTER WONDERS

I want to thank you for the fine piece on wintering eagles in Missouri [*Eagles on the Mississippi*; December]. Being a bit of a camera buff myself, I especially appreciate the technical details offered on each of Noppadol Paothong's fine photographs. I understand these details and they help me enjoy his photos even more fully. The only thing missing is the understanding of what it took for Noppadol to sit out there in the cold, with his fingers freezing, waiting for the perfect shot.

Art Sporleder, Lakeshire

I would like to commend David Stonner on his excellent cover photo on the Jan. 2012 issue [*Hickory Canyons Natural Area* in Ste. Genevieve County]. The contrast, color and composition are beyond comparison!

Walt Jones, Lake St. Louis

DEER KIDS: UPDATE

This time Timmy Gunn got his deer. Timmy, 14, of St. Peters, was featured in *The Deer Camp Kids* [October], a story about the annual deer hunting camp for hearing impaired youths at the H. Roe Bartle Scout Reservation.

During the 2010 hunt described in the story, Timmy saw a large buck deer but did not get a shot. However, this fall, he returned to the hunt at the Bartle Scout camp and shot a doe.

Chris Capps, an MDC outdoor skills specialist, served as guide for both hunts. His stepfather, Eric Pettit, also accompanied him on the hunts.

Reader Photo

SKATING

Bob Merklin of Ware photographed this red-eared slider near his house. "I've seen turtles just under the surface of the water on calm, sunny days," says Merklin, "but I've never seen them walking around on the ice when the lake is frozen." MDC Herpetologist, Jeff Briggler, says that turtles don't really hibernate during winter, rather they enter a state called brumation. During cold weather, reptiles will become lethargic and inactive. However, during relative warm spells, reptiles may be active for brief periods of time. Briggler speculates that this turtle came up to bask on a log in the sun on a mild day and ended up on top of the ice.



DEPARTMENT HEADQUARTERS

Phone: 573-751-4115
Address: PO Box 180,
 Jefferson City 65102-0180

REGIONAL OFFICES

Southeast/Cape Girardeau: 573-290-5730
Central/Columbia: 573-884-6861
Kansas City: 816-622-0900
Northeast/Kirksville: 660-785-2420
Southwest/Springfield: 417-895-6880
Northwest/St. Joseph: 816-271-3100
St. Louis: 636-441-4554
Ozark/West Plains: 417-256-7161

SUBSCRIPTIONS

Phone: 573-522-4115, ext. 3856 or 3249
Address: Circulation, PO Box 180, Jefferson City 65102-0180
E-mail: Subscriptions@mdc.mo.gov

Conservationist online services: Subscribe to the magazine, update your mailing address, or sign up to receive an e-mail when the latest issue is available online at mdc.mo.gov/node/9087

Cost of subscriptions: Free to Missouri households
 Out of State \$7 per year
 Out of Country \$10 per year

Please allow 6–8 weeks for delivery of your first issue.

OMBUDSMAN QUESTIONS

Phone: 573-522-4115, ext. 3848
Address: Ombudsman, PO Box 180,
 Jefferson City 65102-0180
E-mail: Ombudsman@mdc.mo.gov

EDITORIAL COMMENTS

Phone: 573-522-4115, ext. 3847 or 3245
Address: Magazine Editor, PO Box 180,
 Jefferson City 65102-0180
E-mail: Magazine@mdc.mo.gov

READER PHOTO SUBMISSIONS

Flickr: www.flickr.com/groups/readerphotos
E-mail: Readerphoto@mdc.mo.gov
Address: Missouri Conservationist, Reader Photo,
 PO Box 180, Jefferson City 65102-0180

MISSOURI Conservationist

GOVERNOR Jeremiah W. "Jay" Nixon

THE CONSERVATION COMMISSION

Don C. Bedell
James T. Blair, IV
Don R. Johnson
Becky L. Plattner

Director Robert L. Ziehmer

Deputy Director Thomas A. Draper
Deputy Director Tim D. Ripperger
General Counsel Tracy E. McGinnis
Internal Auditor Nancy R. Dubbert

DIVISION CHIEFS

Administrative Services Carter Campbell
Design and Development Jacob Careaga
Fisheries Chris Vitello
Forestry Lisa G. Allen
Human Resources Thomas Neubauer
Outreach & Education Mike Huffman
Private Land Services Mike Hubbard
Protection Larry D. Yannitz
Resource Science Mike Kruse
Wildlife DeeCee Darrow

CONSERVATIONIST STAFF

Editor In Chief Ara Clark
Managing Editor Nichole LeClair Terrill
Art Director Cliff White
Staff Writer Bonnie Chasteen
Staff Writer Jim Low
Photographer Noppadol Paothong
Photographer David Stoner
Designer Stephanie Thurber
Artist Mark Raithel
Circulation Laura Scheuler

The Missouri Conservationist (ISSN 0026-6515) is the official monthly publication of the Missouri Department of Conservation, 2901 West Truman Boulevard, Jefferson City, MO (Mailing address: PO Box 180, Jefferson City, MO 65102.) Subscription free to adult Missouri residents; out of state \$7 per year; out of country \$10 per year. Notification of address change must include both old and new address (send mailing label with the subscriber number on it) with 60-day notice. Preferred periodical postage paid at Jefferson City, Mo., and at additional entry offices. Postmaster: Send correspondence to Circulation, PO Box 180, Jefferson City, MO 65102-0180. Phone: 573-522-4115, ext. 3856 or 3249. Copyright © 2012 by the Conservation Commission of the State of Missouri.

Equal opportunity to participate in and benefit from programs of the Missouri Department of Conservation is available to all individuals without regard to their race, color, national origin, sex, age or disability. Questions should be directed to the Department of Conservation, PO Box 180, Jefferson City, MO 65102, 573-751-4115 (voice) or 800-735-2966 (TTY), or to the U.S. Fish and Wildlife Service Division of Federal Assistance, 4401 N. Fairfax Drive, Mail Stop: MBSP-4020, Arlington, VA 22203.

Printed with soy ink

MDC Online

Discover more about nature and the outdoors through these sites.

Blog: mdc.mo.gov/node/109
Facebook: www.facebook.com/MDConline
Flickr: www.flickr.com/photos/mdc_online
Kids' site: www.XplorMo.org
Missouri Conservationist: mdc.mo.gov/node/83

Missouri Department of Conservation: mdc.mo.gov
Nature Shop: www.mdcNatureShop.com
Twitter: www.twitter.com/MDC_Online
www.twitter.com/Nature_Videos
YouTube: www.youtube.com/user/moconservation

KIDS' MAGAZINE

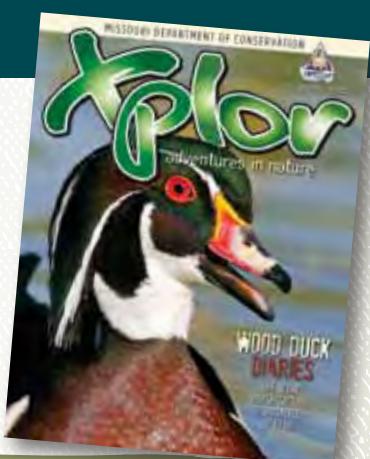
Six times a year we'll bring you eye-popping art, photos and stories about Missouri's coolest critters, niftiest natural places, liveliest outdoor activities and people who've made a living in the wild.

Come outside with us and **XPLOR!**

Ages: 7-12

Missouri residents: FREE (one subscription per household)
 Out of state: \$5 per year; Out of country: \$8 per year

*A guardian's name and address is required with the subscription.
 Please allow 6–8 weeks for delivery of your first issue.*



SIGN UP NOW!

xplormo.org | 573-522-4115, ext. 3856 or 3249

NEWS & EVENTS

by Jim Low



Snowy owl

Snowy Owls Visit Missouri

Some Missourians may wonder if they have been magically transported to the Hogwarts School of Wizardry, as huge, white owls appeared in unprecedented numbers around the state.

The title character of the movie *Harry Potter and the Sorcerer's Stone* receives a white owl as a birthday gift. The cinematic bird is a perfect match for owls that began showing up in Missouri in December.

Snowy owls normally inhabit the high arctic region of North America and Eurasia. However, in years when populations of their prey (mainly

lemmings) crash, the birds are forced to travel south in search of food.

Missouri experienced such mass migrations, known as irruptions, in the 1970s and 1980s. However, the current event far exceeds previous ones. MDC has received dozens of reports from people who were entranced to find the beautiful white owls perched in odd places. Most of the sightings came from the northern half of the state.

Snowy owls are similar in size to great horned owls, which are common in Missouri but are much darker than snowy owls. Most of the snowy owls

visiting Missouri this winter are juveniles. Many are near starvation. They are not accustomed to automobiles, and often land on highways and fail to flee from speeding cars.

MDC Wildlife Ecologist Brad Jacobs said people should not approach the birds. He asked motorists to slow down and do their best to avoid killing owls on roadways. If you see a snowy owl, please call Jacobs at 573-522-4115, ext. 3648.

Conservation Partner of Year

Bass Pro Shops has named MDC Director Robert L. Ziehmer as one of its two 2011 Conservation Partners of the Year.

In presenting the award, Bass Pro Shops founder Johnny Morris noted Ziehmer's commitment to public input and involvement as key components of conservation success.

"All of us at Bass Pro Shops are proud to honor Bob and the Missouri Department of Conservation for everything they have done for all of us as Missourians to protect our right to hunt and fish as well as for their conservation efforts that help protect the wildlife and their habitat. Their work has gained them recognition as the national conservation leader that other states try to model."

Ziehmer and Richard Childress, president and CEO of Richard Childress Racing, received the 2011 awards from Morris at the company's annual Christmas luncheon for associates held at their national headquarters in Springfield.

Past winners of the Bass Pro Shops Conservation Partner of the Year Award include Wayne LaPierre of the National Rifle Association, Rob Keck of the National Wild Turkey Federation, Jeff Trandahl of the National Fish and Wildlife Foundation and former MDC Director John Hoskins.



Bass Pro Shops has named MDC Director Robert L. Ziehmer as one of its two 2011 Conservation Partners of the Year.

Demystifying Deer Management

All that remains of the 2011-12 deer season are stories and photos, but thanks to collaboration between MDC and the University of Missouri Extension, landowners can turn those remnants into action plans for better deer hunting.

MDC resource scientists Emily Flinn and Jason Sumners have teamed up with Extension Fish and Wildlife Specialist Robert A. Pierce II to create a series of free, downloadable guides to practical deer-management techniques. Topics already available include implementing quality deer management on your land, estimating deer

populations with trail cameras, harvest records and observations, aging live deer and aging deer by examining their jawbones.

The guides include photographs, detailed illustrations and worksheets. They are available at extension.missouri.edu/main/DisplayCategory.aspx?C=82. Additional guides are under development and will be available at the same site in the coming months. Topics covered in upcoming guides include the biology of antler development, setting up landowner and wildlife cooperatives, deer-habitat management practices, deer diseases, the importance of providing

quality deer nutrition, establishing and managing food plots, and factors that influence deer population dynamics. Landowners interested in improving their property for wildlife should contact their private land conservationist for technical assistance. Find your local Department representative using the "Who's My Local Contact" link at www.mdc.mo.gov/.

Deer hunting contributes \$1.1 billion to Missouri's economy annually and supports approximately 12,000 jobs. Those are not the only benefits, however. Hunting is a tool that allows landowners to manage local deer populations for fewer, more



ASK THE OMBUDSMAN

Q: Why do crows flock together to attack other birds such as owls and hawks?

A: There is some debate over the function of "mobbing," which is the term for the bird behavior you described. It is anti-predator behavior and may serve to: divert a predator from an area where there are fledgling crows, train young crows to recognize predators, or alert other crows to the presence of the predator. Crows are known to mob various hawks, vultures, bald eagles, owls and ravens. The fact that the predator does not usually turn on the mobbing crows may indicate that surprise is an essential element in the hunting method of predatory birds. Crows will also mob raccoons, squirrels, foxes, domestic cats and humans.

Q: I live in St. Charles County, which is bordered by the Missouri and Mississippi rivers and dissected by major highways with 3-foot-tall barricades down the medians. Have there been any studies of the effects of these unintentional fences on wildlife distribution in the county?

A: Movement barriers are an important component of the effects of urban sprawl on wildlife populations. Safety considerations often dictate that median barriers be used to limit head-on collisions on high-speed roadways where median widths are narrow. I don't know of any

research specific to St. Charles County, but there have been studies elsewhere of ways to accommodate wildlife movement. In the western U.S. and Canada, traditional migration corridors for large mammals are logical locations for constructing safe wildlife crossing points. Soil- and vegetation-covered overpasses and underpasses have been built in Europe and Canada to provide safe crossing points. Smaller-scale, culvert-like crossing sites have been installed under roadways in the U.S. for turtles and small mammals, and these often include some type of funnel to direct animals to the crossing. In Missouri, wildlife may cross roadways almost anywhere and would have to be funneled into safe crossing points—and these funnels could be quite extensive. As you would expect, it is a matter of the cost of construction versus other demands for spending public funds.



Crow

Ombudsman Tim Smith will respond to your questions, suggestions or complaints concerning Department of Conservation programs. Write him at PO Box 180, Jefferson City, MO 65102-0180, call him at 573-522-4115, ext. 3848, or email him at Ombudsman@mdc.mo.gov.

or bigger deer. The new management guide series is designed to help landowners and hunters fine-tune harvest at the local level to maintain healthy, stable deer populations that meet their needs.

Endangered Species Awareness

More than 4,000 students entered the 2011 Endangered Species Postcard contest, submit-

ting artworks based on the theme, "River habitat—we gotta have it!" Winners were: Myles Hamacher of St. Francis Xavier in Jefferson City in the K-2nd-grade category, Ray Winter of St. Catherine Labouré in St. Louis for the 3rd-4th-grade category, Sydney Hastings of St. Paul's Episcopal Day School in Kansas City for the 5th-6th-grade category, Katie Heflin of Heflin Homeschool in St.

Peters in the 7th-8th-grade category, and Ryan Vernon of California High School in California in the 9th-12th-grade category. All five first-place winners will have their postcards printed and sold through MDC's Nature Shops. Participating students learned about Missouri's endangered species and the importance of sustaining healthy habitats. View the top three entries from each grade category and get more information on the contest at www.mdc.mo.gov/node/3533.

Adapt Felt-Soled Waders to Avoid Spreading Rock Snot

Missouri's trout waters are threatened by invasion of *Didymosphenia geminata*, commonly called didymo or rock snot. This invasive diatom covers stream bottoms with dense mats, impairing their value to fish and anglers. Porous-soled waders can carry the invasive diatom to new waters, so effective March 1 the use of waders or footwear with felt or other porous soles will be banned when fishing in trout parks and other specific trout waters in Missouri. Some anglers may choose to replace felt-soled waders. However, you also can adapt felt-soled waders to comply with the new regulation by sealing the soles with solutions of contact cement or marine rubber cement. The procedure is outlined in an instructional video at <http://bit.ly/rRLejr>. Adapting waders is just one step toward solving the problem of spreading rock snot. It still is vital to check and clean, or dry all waders and all other gear that have had contact with the water.



March 1 the use of waders or footwear with felt or other porous soles will be banned when fishing in trout parks and other specific trout waters in Missouri.

2011 Loggers of the Year

When it comes to excellence in logging, three heads apparently are better than one. That was the conclusion of the panel of forestry experts who named Jay Duncan, Gene Fiske Sr. and Gene Fiske Jr. of J&G Logging in Summersville as Missouri's 2011 Loggers of the Year.

The Logger of the Year Award is given to loggers who demonstrate good working relationships with landowners and foresters, minimize damage to remaining trees and resources on harvest sites, use best management practices to conserve soil and water, address wildlife management concerns, practice sustainable forest management and use wood products wisely.

One thing that set the three apart from other candidates was the fact they garnered multiple nominations from representatives of the Missouri Forest Products Association, Pioneer Forest, The Nature Conservancy and MDC. Nominations noted the men's commitment to both their customers and to protecting forest resources.

"MDC recognizes and appreciates loggers who use best practices to harvest timber in ways that are economically, ecologically and socially sustainable," said Missouri State Forester and MDC Forestry Division Chief Lisa Allen. "The statewide Logger of the Year award is the highest honor loggers can achieve in Missouri. It takes special conviction to being the best to achieve this honor, and we congratulate these outstanding loggers."

Missouri Logger of the Year recipients receive framed certificates from MDC and a Stihl chainsaw donated by Crader Distributing in Marble Hill.

Muzzleloader Deer Harvest

Hunters shot 15,238 deer during the muzzleloader portion of Missouri's firearms deer

season. Missouri held its first muzzleloader season in 1988. Back then, hunters had to declare if they intended to use a muzzleloader or a center-fire rifle. If they chose a muzzleloader, they had to use a muzzleloader during the firearms season in November but also could hunt during the muzzleloader season. That first year, the muzzleloader season was three days long.

Since then, many of the original restrictions on muzzleloader hunting have been relaxed, and the season has been lengthened to 11 days. Changes in muzzleloader technology also have contributed to the sport's increased popularity. When Missouri had its first muzzleloader hunt 23 years ago, most commercially available muzzleloaders were traditional caplock and flintlock types, and muzzleloader season was a practical exercise in hunting history. Today, most hunters use in-line muzzleloaders, often with telescopic sights, modern propellants and bullets.

Water Summit Defines Priorities

Missouri's Water Summit brought together people from across the state Dec. 1 and 2 and produced dozens of recommendations for the wise, sustainable use of Show-Me State water resources. The Conservation Federation of Missouri (CFM) organized the meeting as a follow-up to the 2009 Summit on the Future of Missouri Outdoors. The summit theme was "Missouri's Water Realities: Deepening Our Water Wisdom and Mobilizing for Action." The top 10 action priorities identified during the summit were:

1. Develop a simple, unified water awareness campaign that connects with all Missouri citizens.
2. Establish, incentivize and evaluate best management practices, strategies and water goals at the watershed level.
3. Build a sense of pride, emotional connection and responsibility through a statewide clean water campaign with education.
4. Protect watersheds, riparian corridors and flows through incentives that place a value on healthy water resources.
5. Invest in water resource planning, conservation and efficiency at all geographic levels.
6. Strategically partner with industry and commerce to inform and educate citizens,

Did You Know?

We work with you and for you to sustain healthy forests.

The George O. White State Forest Nursery

» **Located in Texas County**, the George O. White State Forest Nursery offers a variety of low-cost seedlings for reforestation, windbreaks and erosion control, as well as wildlife food and cover.

» **More than 100,000 seedlings** are given to fourth graders for Arbor Day each year.

» **200,000 seedlings** are provided for planting projects on Department lands annually.

» **80,000 seedlings** are provided to FFA, 4H, Scout groups and other youth groups annually.

» **More than 13,000** orders are processed and about 3.5 million seedlings are shipped each year.

» **About 62 million seedlings** were sold over the past 15 years.

» **A special 75th anniversary tree bundle** is being offered this year. The bundle consists of two seedlings of 10 species, including flowering dogwood, bald cypress, black walnut, white fringetree, red oak, white oak and shortleaf pine.

» **More than 70 species of trees and shrubs** are offered by the nursery to help Missourians create wildlife habitat.

» **For prices and ordering information**, visit www.mdc.mo.gov/node/3328, or call 573-674-3229. The nursery accepts orders through April. However, many bundles and individual tree and shrub species will sell out before then. Orders are shipped starting in February.

» **Since 1935**, the nursery has been producing trees. For more information on the history of the nursery, visit www.mdc.mo.gov/node/3986.

trade leaders, political leaders and business leaders to develop a combined water ethic on a watershed basis.

7. Increase efforts for water quality and quantity outreach and education (statewide campaign, reallocation of resources for outreach and education, charismatic water icon).
8. Develop a comprehensive/integrated statewide water plan.
9. Expand the floodplain and restrain development.
10. Recognize and showcase the environmental success of innovative farmers through a local community partnership-based approach (e.g., Farmers Teaching Farmers).

Summit results, including videos of speakers and panel sessions, are available at www.confedmo.org/watersummit.



The Water Summit produced recommendations for the wise, sustainable use of Missouri's water resources.



75th Anniversary of Conservation PHOTO CONTEST!

THE MISSOURI DEPARTMENT OF CONSERVATION INVITES YOU TO ENTER OUR 75th Anniversary Photo Contest. Get out those cameras and search those photo files for your best images that celebrate the natural wonders of Missouri and the



Photo Tip of the Month

Great wildlife photography requires more than just long zoom lenses—It requires planning and patience. Most wildlife photos don't happen by chance. The best images are usually captured by careful research and planning so the photographer knows the best place and time to capture the elusive critter. Then patience must be observed, as it often takes several hours or even days of quiet waiting for the subject to appear.

Wildlife photographer Noppadol Paothong spent two months researching the Missouri endangered king rail and another four months of repeated trips to the marsh (with very early mornings), before finally capturing this and other photos of the elusive bird. During those frustrating four months, Nop talked to experts and did more research to better understand the bird's behavior. That work finally paid off with the photos that appeared in the April 2007 issue of the *Missouri Conservationist*.

75-year legacy of MDC. Winners will be featured in the October issue of the *Missouri Conservationist*, as well as on the MDC website and other media.

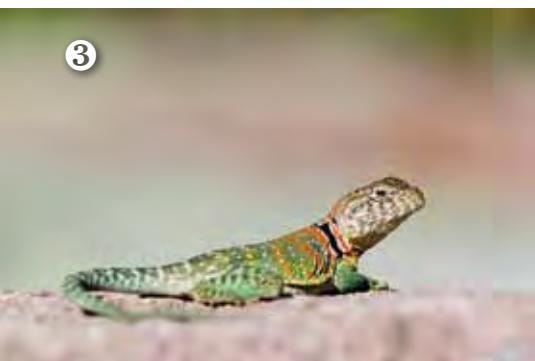
A full list of rules and guidelines can be found on our website: www.mdc.mo.gov/node/16689. Entries will only be accepted via Flickr, an Internet photo sharing service. If you are not on Flickr, it is easy to join. Just go to our 75th anniversary photo contest Flickr site for more information: www.flickr.com/groups/mdc75thanniversary/.

There are seven categories you can enter (see examples to the right):

1. Mammals
2. Plants
3. Reptiles and Amphibians
4. Insects and Spiders
5. Birds
6. Outdoor Recreation
7. Habitats and Landscapes

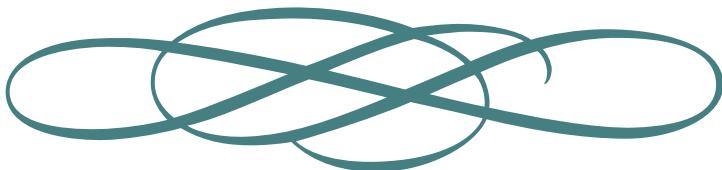
Entries will be accepted through May 15. After that date, a panel of photography and nature experts will select the best entry in each category. These category winners will be posted on the MDC website starting July 1, when the public can vote for their favorite. The photo with the most votes will be named "Best of Show." All seven winners will be displayed in the October magazine and other MDC media.

So grab those cameras and head outside to capture your best shot and help us celebrate our 75th anniversary!





Healthy Forests for Generations



This year, MDC celebrates the 75th anniversary of putting the state's citizen-led conservation efforts into action. In this issue, we highlight successful efforts to restore and conserve Missouri's forests. This is the story of how Missourians have worked together to improve our forests to benefit wildlife and people, for generations to come.

by BRETT DUFUR

E

ASTER SUNDAY, 1941, WAS A DAY the fate of Missouri's forests seemed to glow red hot. Smoke hung heavy in the air. Much of the Ozarks was ablaze. Yet Missourians were determined to forge an entirely different fate for the forests of the state.

Since that Easter Sunday, generations of Missourians have worked with backfires, shovels and education to curb the tradition of burning forestland. Missourians have restored healthy forests and created a sustainable timber industry that embraces wise use of Missouri's forests.

Today, millions of acres of healthy forests once again blanket more than a third of our state. And in just the past 20 years, Missouri has actually gained 1.4 million acres of forest.

FROM ABUNDANCE TO ASHES

In the 1800s, forests covered 70 percent of the state. Explorers wrote of the dark swamps of the Bootheel, the park-like pine forests of the Ozarks, the balds of southwest Missouri and the mix of prairie and forest in northern and western Missouri. Early settlers found a landscape rich with the essentials of frontier life—wood, water and wildlife.

Then, things began to change. By the late 1800s, lumber mills sprang up to feed a country hungry for wood products. Western trains ran on Ozark pine—3,500 ties per mile. In 1912 alone, 15 million railroad ties



For more than 20 years, Grandin Mill flourished and was the largest lumber mill in the nation. By 1910, the forests around Grandin were gone, forcing the company to move its headquarters to Eminence, where operations continued until 1919.

headed west, and Ozark lumber shipped east to build a growing nation.

Within a short timespan, the boom of Ozark timber went bust. The rolling Ozark hills that had afforded early settlers with all of their basic needs could no longer provide for people or wildlife. By the 1930s, only about 2,000 deer were thought to exist in the state. Turkeys declined to a few thousand birds in scattered flocks. For

COMMUNITY FORESTS

The trees in our communities are valued for their economic, social and environmental benefits. Because the urban environment is hard on trees, urban foresters use specialized techniques to maintain our community forests.

"MDC's TRIM grants, in cooperation with the Missouri Community Forest Council, provide up to \$10,000 for community tree inventories, removal or pruning of trees, tree planting and educational programs," says Nick Kuhn, MDC community forestry coordinator. "This helps

communities provide safe and healthy trees, while the trees work for all of us by cleaning the air, and improving the soil and water."

This program assists agencies, public schools and nonprofit groups with the improvement of trees on public lands. In 2011, the Department awarded more than \$306,000 to several dozen Missouri communities and schools throughout the state.

"The TRIM grants have allowed the City of Columbia to extend our resources and develop greater projects. MDC's TRIM grants also show our city leaders the importance of wisely managing our community forests,"

says Brett O'Brien, Columbia park natural resource supervisor.

With help from MDC, communities, college campuses and electric providers all over the state participate in wise tree care by being a part of the Arbor Day Foundation programs known as Tree City USA, Tree Line and Tree Campus. These programs foster tree plantings as well as best practices for tree care. Missouri has 81 cities, 11 electric utilities and three colleges recognized by the Arbor Day Foundation for helping trees where 3.7 million Missouri residents live.

Learn more about MDC's Community Forestry Programs at mdc.mo.gov/node/4781.



all practical purposes, bear and ruffed grouse were gone, and most other species were in dire straits.

MDC'S ROOTS IN FORESTRY RUN DEEP

In November 1936, Missourians came together to pass a state constitutional amendment to create an apolitical Conservation Commission to restore and conserve Missouri's fish, wildlife *and forests*. This was a progressive concept for its time.

"Their foresight is one thing that makes Missouri's conservation model so unique," says John Tuttle, MDC forestry division unit chief.

Missouri's vision came about largely due to the efforts of early conservation leaders E. Sydney Stephens and J. T. Montgomery, who believed good forest management was essential for wildlife.

When the Conservation Commission began on July 1, 1937, the Commission appointed I. T. Bode, a forester, as the first director of the Conservation Department. Bode understood the importance of partnering with landowners for forestry conservation success.

Most western trains ran on Ozark pine, and every mile of track required 3,500 ties. In 1912 alone, 15 million hand-hewn railroad ties were sold in Missouri. Within a short timespan, the boom of Ozark timber went bust, and the rolling Ozark hills could no longer provide for people or wildlife.

In 1938, Forester George White came to Missouri by way of the U.S. Forest Service. He believed the keys to healthy forests were fire suppression, education and protection. He directed the Department to purchase cut-over forestland to serve as models for forest management, and to create a state forest nursery to supply trees for reforestation. He knew landowners who planted trees would be less likely to allow their land to burn. Lastly, White sought to make foresters available to landowners to help them manage their own wooded acres.

The tasks ahead were daunting. Some foresters deemed Missouri's human-caused forest fires too big a problem to contain. Burning forests was a tradition dating back

to early settlers. Once the trees were gone, soil eroded quickly, choking the creeks and the fish in them, and making the landscape unable to support crops.

"Starting in 1937, fire suppression was job number one for the newly created Conservation Department. Everything else came later," says Gene Brunk, retired MDC forestry division unit chief.

Stories tell of early foresters following their noses to find smoke "thicker than usual." Soon, steel and wood-braced fire towers dotted the landscape. To a readership well connected by phones and good roads, it is difficult to appreciate the challenges surmounted by early fire tower watchmen. There's was an age before effective radio communication. Some towermen even resorted to sending postcards to other fire districts to alert them of distant smoke.

Fighting forest fires was job number one for the newly created Conservation Department. Volunteers were, and continue to be, important partners in controlling fire.

Volunteers and community support were vital to early fire fighting success, and they still are today. Of course, the best way to stop a fire is to keep it from starting. When the harried foresters weren't battling fires, they talked to anyone who would listen about forest fire prevention, forest management and conservation.

Slowly things began to change. White led the Department's forestry efforts for 22 years, becoming the longest-tenured state forester. By the time he retired, his vision had grown into one of the most respected state forestry programs in the country.

White's keys to healthy forests still resonate in modern forest management. "The keys to healthy forests remain sound forest management, education and protection from land conversion practices," Tuttle says.

"Tremendous progress in Missouri's forest management has been made in the last 75 years, with MDC leading the way," Tuttle says. "The once impossible task of fire control in the Ozarks is a reality. Deer and turkey are found in record numbers. Restoration programs



THE SHOWBOAT

When the Missouri Department of Conservation formed in 1937, burning forests in the rural Ozarks was a land management tradition dating back to early settlers. To improve forests and wildlife, the young agency created a new way to spread public information on conservation: the Forestry Division's Showboat. Vehicles, such as this 1946 Chevrolet paneled delivery truck, were equipped with a portable generator and a movie projector. The Showboat visited rural schools throughout the Ozarks, showing movies about fire prevention and conservation, and handing out free popcorn. For many, these were the first films they had ever seen, since electricity had yet to make it to many areas. The Showboat operated from the late 1930s to the early 1950s. One is on display today at the Twin Pines Conservation Education Center in Winona.



have supported many native species of fish and wildlife. And once again, Missouri is a leader in wood products."

Fire management today is the best it has ever been. MDC's Rural Fire Protection program remains one of the Department's most effective statewide programs. It began in the mid-1960s to organize, equip and train rural fire departments. MDC foresters also provided on-site training for fire suppression. This program has protected nature, lives and property.

To date, MDC has provided 776 fire departments with firefighting equipment valued at more than \$58 million and firefighting grants totaling more than \$3.8 million. MDC's fire prevention efforts also include helping communities and homeowners to adopt federal Firewise principles to greatly reduce the chances of fire damage.

Well-planned prescribed fires continue to be a useful management tool to mimic natural processes and effec-

tively manage large areas. Prescribed fire on a landscape scale increases habitat diversity for all woods and prairie. Prescribed fires encourage native species, increase wildlife food supplies and reduce wildfire potential.

MDC WORKS WITH YOU TO SUSTAIN HEALTHY FORESTS

Partnerships are vital to ensure healthy forests. MDC, the U.S. Forest Service and landowners work together to improve Missouri's forests for wildlife, recreation, timber and watershed protection. MDC's state land program manages more than 400,000 acres of public forestland. But those acres are but a fraction of Missouri's total forests.

"Landowners own 83 percent of the state's forest, and what happens on private forest lands has a major effect on the state's forest health," Tuttle says. "Private landowners are the key to forest conservation."

To that end, the Missouri Forest Action Plan was developed—a strategy for sustaining Missouri's forests and the benefits and services we expect from them.

"The plan serves as a call to action. While Missouri's forests are increasingly threatened, they offer tremendous potential to help with many of our most pressing social and environmental challenges," says Lisa Allen, MDC forestry division chief.

MDC works with landowners on long-term stewardship of their property, which can span multiple generations. Most landowners realize that forest management is an investment in the future and want to leave their land better than they received it.

"If managed wisely, a healthy forest will keep producing quality trees for years to come, creating tremendous economic, environmental and social benefits," says Mike Hoffmann, MDC forestry division unit chief.

Department foresters can advise landowners on all phases of forest management such as tree planting,



MDC forester Art Suchland, left, discusses timber sales with landowner Dean Klohr. To learn more about forest management for landowners, visit mdc.mo.gov/node/3352.



Stegall Mountain in Peck Ranch Conservation Area

thinning and harvesting; wildlife habitat development; and pest control. In addition, the Conservation Reserve Program and other federal programs have encouraged more landowners to reforest open land for erosion control, wildlife habitat and future timber supply.

THREATS

Although forest management helps to conserve this valuable resource, our trees and forests face threats from many fronts. Invasive insects, plants and diseases threaten the health of our forests. Our forests can also be damaged by extreme weather events such as ice, windstorms, droughts and floods.

“Forests have always faced challenges, from uncontrolled fires, oak decline, chestnut blight and Dutch elm disease to our present-day challenges with gypsy moths, emerald ash borers, urban sprawl and thousand cankers disease,” says Nick Kuhn, MDC community forestry coordinator. “We must be ready for future challenges. When our forests are healthy, they are better equipped to deal with new challenges.”

HEALTH, WEALTH AND HAPPINESS

Trees and forests are Missouri’s greatest renewable natural resource. “Healthy forests provide clean air and

To see more beautiful Missouri forests, visit MDC’s GoForest YouTube video at <http://tinyurl.com/6o7c89u>.

water, habitat for hundreds of species and even conservation areas to be enjoyed by all Missourians,” Kuhn says. “No matter where we live—in the country, suburbs or cities—trees and forests are vital to our health, wealth and happiness.”

Through wise-use forest management practices, Missouri is once again a leader in wood production. Railroad ties and lumber are still important products, but the wood industry has become much more diversified. Missouri is a national leader in the production of charcoal, barrels, walnut nutmeats and shell products, and red-cedar gift items. In 2011, Missouri’s forest industry supported 41,200 jobs, contributed \$7.3 billion to Missouri’s economy and generated \$77 million in state sales tax.

But timber is far from the only benefit of the forest. Our forests provide habitat for an incredible diversity of plants and animals. Because forest ecosystems are very complex, good forest management and good wildlife management are closely linked. Missouri is home to about 730 species of wildlife, many of which live in the forest during a part of their life. Animals ranging from

YOU CAN HELP MISSOURI'S FORESTS

MDC partners with numerous organizations to ensure that Missourians can contribute to Missouri's healthy forests.

As part of the Missouri Forestkeepers Network, more than 2,000 Missourians protect and enhance forests through monitoring, advocacy and education activities. Learn more at forestkeepers.org or call 1-888-473-5323.

Missouri Forestkeepers Network is administered by Forest ReLeaf of Missouri, a non-profit organization that provides thousands

of trees for public and nonprofit plantings throughout the state. Visit moreleaf.org or call 1-888-473-5323.

MDC also partners with the Missouri Community Forestry Council to conserve, protect, expand and improve our community forests. Visit mocommunitytrees.org to learn about how to help the trees where you live.

The Forest and Woodland Association of Missouri serves to connect Missouri's 360,000 private woodland landowners with resources to more productively manage their forests, as well as to act as a statewide advocacy group. Visit forestandwoodland.org to learn more.



Mixed Hardwoods
Oak-Hickory
Oak-Pine
Prairie

Approximately one-third of Missouri is now covered by forests.

the white-tailed deer and wild turkey to the rare Ozark zigzag salamander are found in Missouri's forests. The pileated woodpecker, ovenbird, black-and-white warbler and screech owl are just a few of the many birds that inhabit the forest. Each bird or animal has a specific place and role, or niche, within the forest ecosystem. The more niches that can be created within a forest, the greater the number of species it can support.

To support a diversity of wildlife species, today's forest management and timber harvest practices need to be diverse. Correctly locating logging roads to protect Missouri's streams is just one example. Leaving older trees for cavity-nesting species, cultivating acorn-producing trees as a food source and creating young stands of trees for food and cover are other examples. The aim is for a balance of habitat types to support all species over the long term.

MISSOURI'S LARGEST OUTDOOR CLASSROOM

Forests are long-lived and management decisions can have lasting impacts. With this in mind, MDC established the Missouri Ozark Forest Ecosystem Project (MOFEP) in 1990. This 100-year project studies the impacts of various forest management practices not only on the health of the forest, but also on plants and animals.

Forest and wildlife scientists are learning more about the impacts of forest management practices and harvesting techniques in Missouri thanks to this important study. This will help foresters, wildlife biologists and forest landowners make better-informed management decisions to ensure healthy forests and wildlife well into the future.

MISSOURIANS CARE ABOUT CONSERVING FORESTS

Missourians have achieved some amazing results in conserving Missouri's forests. Together, we have transformed



The George O. White Nursery offers a variety of low-cost seedlings for reforestation, windbreaks and erosion control, as well as wildlife food and cover. Located in Texas County, the nursery annually grows and distributes approximately 3.5 million seedlings of 70 species of trees, shrubs and prairie forbs. Learn more at mdc.mo.gov/node/3986.

forestry into a sustainable industry that now grows more trees than it harvests. We restored and conserved dozens of fish and wildlife species and ensured that Missouri is a great place to hunt and fish. We created a system devoted to serving both rural and urban landowners and established accessible public lands and facilities throughout the state. MDC works with citizens to sustain healthy forests for the benefit of people and wildlife—a job that began in the face of flames and was hard won. ▲

Learn more about Missouri's forests at mdc.mo.gov/node/4827.





Regulations 2012 Update

MISSOURIANS CARE DEEPLY about our state's forests, fish and wildlife. To ensure these resources are protected, the Conservation Department's Regulations Committee reviews the *Wildlife Code of Missouri* each year. In doing so, the Committee considers hundreds of suggestions from hunters, anglers and other outdoor enthusiasts. Although every suggestion cannot be adopted, all are carefully reviewed. The following is a summary of key changes to the *Wildlife Code*. For the complete *Wildlife Code*, visit www.mdc.mo.gov/node/4871. Most changes will take effect March 1, 2012, unless noted. Each is a reflection of the Department's commitment to work with you and for you to sustain healthy plant and animal communities, increase opportunities for Missourians to experience nature, and promote public safety.



To provide hunters more options during the muzzleloader portion of the firearms deer season, additional hunting methods will be allowed.

Many regulations are designed to sustain healthy plant and animal communities. Some rules involve harvest regulations; others are set to curtail the spread of invasive plants and animals that threaten Missouri's native species.

Effective March 15, waders or footwear that have porous soles are banned at trout parks and in certain trout streams in order to stop the spread of didymo.

- Didymo, or rock snot, is a single-celled alga that forms thick, slimy mats in cold-water streams. Left unchecked, didymo can blanket entire stretches of water, reducing food for fish such as trout, degrading water quality and making it impossible to fish. Didymo can spread by hitching rides in the porous soles of waders and fishing footwear. Once it gains a toehold, it's nearly impossible to eradicate. To keep didymo at bay, waders or footwear that have porous soles of felted, matted or woven fibrous material have been banned at trout parks and in certain trout streams.



 The Resident Fur Handlers Permit was rescinded on July 1, 2011.

- To curb the spread of invasive plants, it's now illegal to plant seeds on Department areas.

Missouri is a world-class place to hunt, trap, fish and experience nature. The following regulation changes increase opportunities for Missourians to engage in these activities.

- To provide hunters and trappers more opportunities to sell their furs, the Resident Fur Handlers Permit was rescinded on July 1, 2011. Now, people with a valid permit to hunt or trap may possess, transport and sell furs throughout the year.
- Hunters with developmental disabilities who have taken a hunter-education course but failed

Didymo

to pass the certification tests now may purchase firearms permits. However, they must carry a physician's statement as proof of their disability and hunt in the immediate presence of a properly licensed hunter age 18 or older who is hunter-education certified or was born before Jan. 1, 1967.

• Members of the U.S. military currently assigned as patients to Warrior Transition Brigades, Warrior Transition Units or military medical centers now may take wildlife (except deer, turkey and migratory birds) and fish (except trout) without a permit. They may also purchase resident turkey and deer permits regardless of where they live.

• In the past, hunters could not use crossbows or firearms to hunt frogs on conservation areas but could use these methods to take frogs on non-Department lands. Beginning with the 2012 frog season, which starts at sunset on June 30, bullfrogs and green frogs may be taken on conservation areas using crossbows, pellet guns and .22 caliber or smaller rimfire rifles or pistols.

• All-day dove hunting will be offered at August A. Busch Memorial, Bois D'Arc, Eagle Bluffs, Lake Paho, Longan, Marais Temps Clair, Otter Slough, Ten Mile Pond, White River Trace and White Memorial conservation areas. Only partial-day dove hunting was allowed at these 10 areas previously.

• Hunters who enjoy pursuing game using primitive methods will have additional opportunities in 2012. Atlatls may be used during the fall archery deer and turkey seasons. An atlatl is a rod or board-like device used to launch, through a throwing motion of the hand, a 5- to 8-foot-long dart.

• To provide hunters more options during the muzzleloader portion of the firearms deer season, additional hunting methods will be allowed. These include archery methods, crossbows, atlatls, handguns firing expanding-type centerfire ammunition, and air-powered guns, .40 caliber or larger, that are charged only from an external high-compression power source. ▲

How Regulations Are Set

Each year, the Conservation Department's Regulations Committee reviews the *Wildlife Code* to ensure Missouri's forests, fish and wildlife are protected. Here's how the process works.

1. Changes proposed by the public and staff are brought to the Committee to review.
2. The Committee researches the effects of the proposed regulation changes. Information reviewed may include costs to taxpayers, effects on wildlife populations, user group surveys, public comments and feasibility studies.
3. When research shows a change would improve management of a natural resource or provide more opportunities for Missourians to enjoy nature, a proposed regulation change is sent to the Conservation Department's director.
4. If the director approves the change, the proposal is submitted to the Conservation Commission, four citizens appointed by the governor.
5. If passed by the Commission, the proposed changes are filed with the secretary of state and published in the *Missouri Register*. A link to the *Register* can be found at www.mdc.mo.gov/node/4871.
6. Publication of proposed changes in the *Missouri Register* begins a 30-day public comment period. If no comments are received, the final regulation is filed and becomes effective either 30 days after publication in the *Missouri Code of State Regulations* or on the date specified in the proposal.
7. When comments are received, the proposal is reviewed. Based on the public's comments, the Commission may decide to drop, modify or implement the regulation.

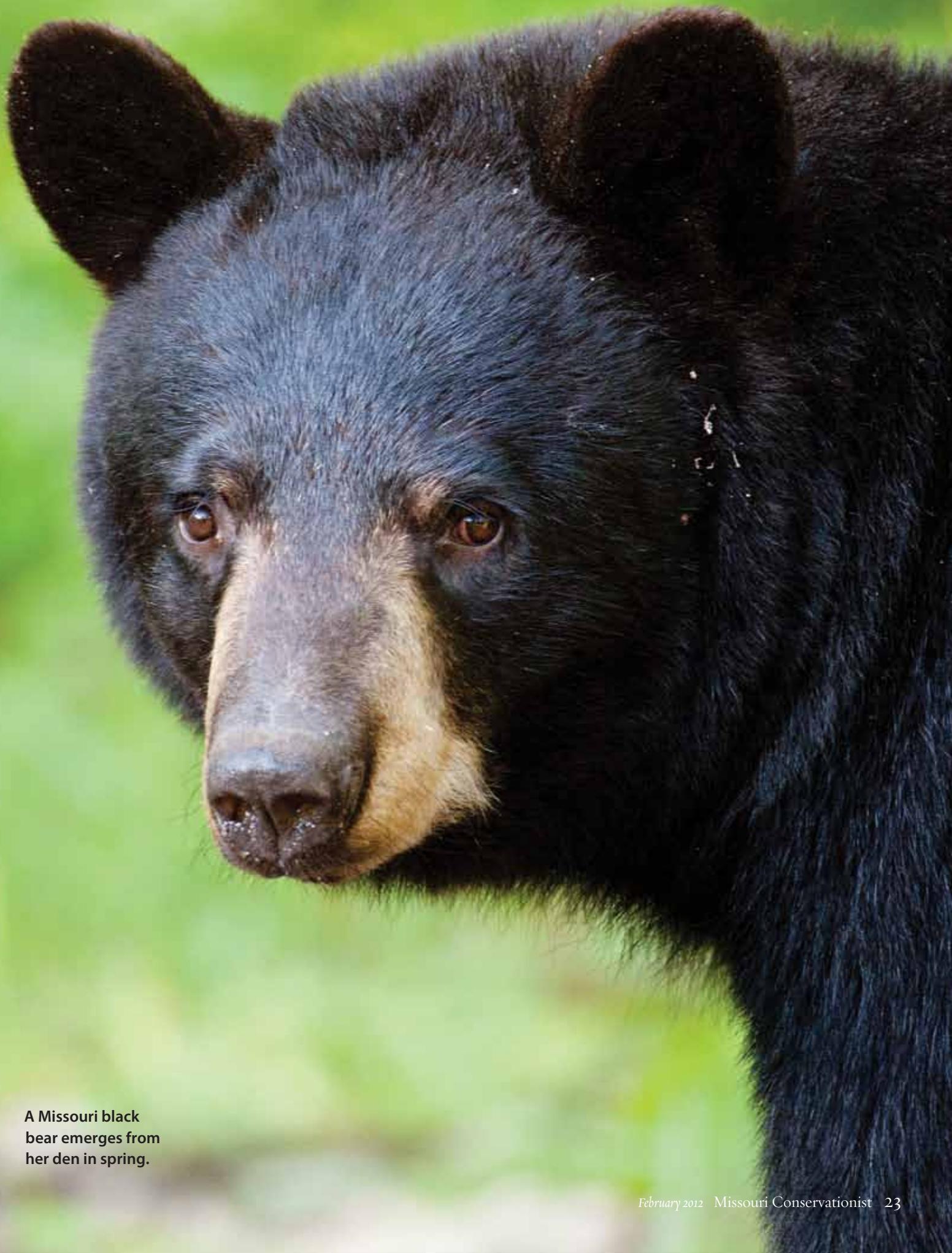


According to new *Wildlife Code* regulation changes, bullfrogs and green frogs may be taken on conservation areas using crossbows, pellet guns and .22 caliber or smaller rimfire rifles or pistols, beginning at sunset on June 30.

Does a **Bear** Den ⁱⁿthe Woods?

An intern's-
eye-view of
Missouri bears'
home lives.

by CHELSEY KROESE and JEFF BERINGER



**A Missouri black
bear emerges from
her den in spring.**

B

EARS... IN MISSOURI? In the back of my mind, I knew we had a few black bears here, but I never thought we had enough to start a black bear conservation program. So when I was offered the chance to work as an intern with Biologist Jeff Beringer, and be a part of this milestone in Missouri's natural history, there was only one answer—of course!

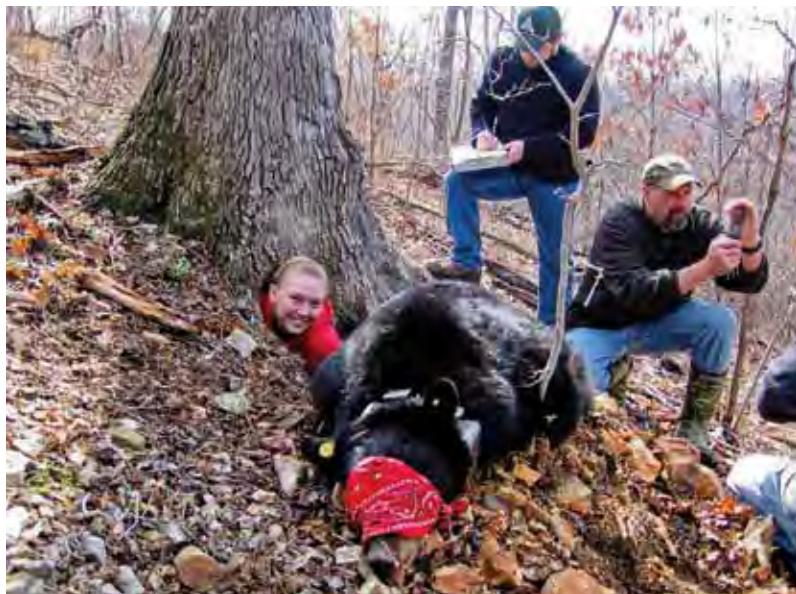
Our study followed 13 radio-collared bears, and my role was to help collect and analyze information about their dens. This turned out to be a much livelier undertaking than it sounds. My first day on the job is a good example.

We loaded up the Department's truck and left early in the morning for the three-hour trek to southern Missouri. Then we met up with other Department of Conservation biologists and the landowner on whose land Bear Number 1008 was denned.

After a few introductions, we made a long, uphill hike to our first denned-up Missouri black bear. It was a female with two cubs, and she was denned in a cavity at the base of a tree. Her collar had fallen off, so Jeff needed to tranquilize her and refit the collar.

I don't know exactly what I was expecting up to that point, but the moment they heaved that 300-pound mother out of her den with her two squalling cubs, I was blown away.

MDC intern Chelsey Kroese collects den measurements, which requires her to crawl inside the bear's den.



Above: MDC Biologists takes measurements of a cub. Right: A mother black bear in a cave den. Biologists prefer to say that bears enter a "winter lethargy" and don't consider their sleep to be a true hibernation.

Instantly I was thrown in the mix, trying to concentrate on the data that I needed to collect but overwhelmed by the sight and sounds of three wild black bears. Finally, after my initial awe, I was able to pull myself together and get back to work.

My data sheet required that I classify the den as a tree cavity, ground nest, root wad/brushpile or rock cave. Next, I needed den measurements: dimensions of the den, entrance, and bed, which required me to crawl inside the bear's den. Being curled inside an actual bear's den was definitely an unforgettable experience. It was surprisingly clean, warm and incredibly cozy! For a fleeting moment, it even gave me the weird sensation that it would be a wonderful place to nap after my uncharacteristically early morning.

After den measurements, I recorded the type of bedding material (leaves, grass, twigs), the den's elevation, temperature and aspect (the compass direction of the slope where the den is located). This procedure was repeated for all eight dens that we visited.

Of those eight dens, three bears denned in rock caves, three in root wads/brushpiles and one each in a tree cavity and a ground nest.



Winter Birth

Pregnant female bears give birth to cubs during winter denning.



Cubs are born in January or February, often while the mother is sleeping.



Cubs grow quickly and will weigh around 6 pounds when they leave the den.



Interior den size varied but typically had little extra space and conformed to the size of each bear. A couple of bears did excavate their dens in order to gain more space; both were females with cubs. Den aspects had no consistent patterns. However, for bedding material, all bears consistently used grass, small twigs and leaves. Depth of the bears' beds typically ranged from 3 to 5 inches and elevations of dens ranged from 1,100 to 1,580 feet. Finally, all dens were in similar habitat structure consisting of an abundance of downed trees and moderate hardwood regeneration.

Bears den during winter months because their primary food sources—nuts, insects and berries—are scarce, and it would be impossible to find enough to eat. Biologists prefer to say that bears enter a “winter lethargy” and don’t consider their sleep to be a true hibernation. During our March den visits we found that some bears appeared lethargic while others were wide awake.

In the months prior to entering their dens, bears can gain up to 40 pounds of fat per week. Several days before denning, a bear will eat a great deal of roughage, including grass, leaves and small twigs in order to form a fecal plug that stays in place until after den emergence. A bear’s body goes through several changes once it is denned. Its heartbeat can drop from 55 beats per minute to 10 beats per minute, and the bear’s body temperature will drop from 5 to 9 degrees below normal. Bears don’t eat or drink during their winter sleep, and adults can lose 10–40 percent of their body weight. When bears emerge they are hungry and lean.

Pregnant females give birth to cubs (usually two) during winter denning. Cubs are born in January or February, often while the mother is sleeping. They weigh about 8 ounces, but they grow quickly and will weigh around 6 pounds when they leave the den.

No one knows why some bears choose den sites such as hollow trees or rock caves while others den in a brush pile or open woods. Research has demonstrated that cub survival is higher when bears den in trees or protected areas. Bears likely investigate several potential den sites throughout summer and will sometimes move from one den site to another if disturbed. Individual bears don’t usually

ILLUSTRATIONS BY DAVID BESINGER



Individual bears don't usually reuse dens but sometimes their adult offspring will use the den in which they were born.

reuse dens but sometimes their adult offspring will use the den in which they were born. For more pictures of bear dens and Missouri black bears visit the bear project website at www/fwrc.msstate.edu/carnivore/mo_bear.

My internship opened my eyes to the work and procedures required in the conservation field. It has given me a real-world example of how the scientific method is used to answer a question. I've also, in the words of Jeff, become a "junior bear expert," since the beginning of my internship. I am thrilled to have had the opportunity to contribute to our state's growing body of information on black bears, which are once again calling Missouri home. ▲

For information on the Department's intern program, visit www.mdc.mo.gov/node/8080.



No one knows why some bears choose den sites such as hollow trees or rock caves while others den in a brush pile or open woods, but research has shown that cub survival is higher when bears den in trees or protected areas.



Red-Headed Woodpecker

Conspicuous in flight and territorial in nature, this beautiful forest resident is a treat to watch.

MISSOURI'S FORESTS PROVIDE habitat for a diversity of plants and animals and one of my favorite woodland creatures is the red-headed woodpecker (*Melanerpes erythrocephalus*). Striking in appearance, with its ruby-red hood, black-and-white plumage and stout gray beak, the red-headed woodpecker is easily distinguished from all other woodpeckers in Missouri. The species is also conspicuous in flight as it flashes its brilliant white rump and secondary feathers with every wing beat. The red-headed woodpecker is not only unique in appearance, but also in its feeding habits. It is one of only a handful of woodpeckers known to store food away for later use, sometimes at a single location, called a larder, but often in a variety of caches.

Red-headed woodpeckers are found throughout Missouri but they are sporadic, especially in winter. They prefer open woodlands, forests and parks, especially where tall, dead trees are present. I've witnessed their discerning taste in habitat as I've seen them on every visit to Shaw Nature Reserve (Franklin County), with its open woodlands and fields, but I've never spotted a single bird in the brushy woods surrounding the fields of our farm only a few miles away. As a matter of fact, red-headed woodpeckers have inspired me to spend more time on timber stand improvement to make my woodlands more welcoming to avian visitors.

Red-headed woodpeckers eat a variety of foods, including acorns, berries, fruit, insects, bird eggs and even small rodents. I have observed them for hours as they stored food, including live insects, in small tree cavities and underneath bark. Territorial, they will attack anything that comes near one of their caches, including squirrels. Once I watched a chickadee land near a red-head's cache, and the tiny bird paid dearly for its mistake! In my observation, brown creepers have been the only bird species to fly under the territorial radar of red-headed woodpeckers.

Red-headed woodpeckers are gregarious and noisy, chattering incessantly, "tchur-tchur," to others in their social group. Nesting occurs in the spring, in cavities of dead trees and branches. Vines, bark, grass and other materials are used to construct a nest. A clutch consists of four to seven eggs, which hatch in about two weeks. Fledglings leave the nest a few weeks later. Juvenile red-headed woodpeckers can be distinguished by their gray-brown head and black bars across their white secondary feathers.

Photographing red-headed woodpeckers is a challenge as most of their activity is conducted well above eye level. If you are lucky enough to find a subject that is lower in the canopy, you will be pleasantly surprised at how amenable it is to photography, too busy storing morsels to fret over nature paparazzi. The next challenge is to properly expose the red-head's greatly contrasting colors of red, white and black. I suppose most of my favorite birds are difficult to photograph. Perhaps, along with their good looks, that is why they are so special.

—Story and photo by Danny Brown





Flag Spring CA

Enjoy a midwinter outdoor adventure at this large, rugged area in the Southwest Region.



GEAR UP THIS month, and head to Flag Spring CA in Barry and McDonald counties. This 4,036-acre area, named for the stream that flanks its west side, offers something for nearly every outdoor enthusiast. Wildlife photographers will appreciate the area's wild, rugged beauty. Hikers, bikers and horseback riders will find nearly 12 miles of multi-use trails winding throughout the area. Firearms enthusiasts can target practice at the area's unstaffed shooting range and new shotgun-shooting area. The area is also popular with hunters and trappers, and birders may see a few returning migrants by the end of February.

Primarily upland oak-and-hickory woodlands, Flag Spring CA is managed for wildlife habitat. Upcoming treatments, including prescribed fire, will focus on improving wild turkey brood-rearing habitat in an effort to bring the area's turkey population up to par with that found in the rest of the state. Most of the area's 13 wildlife food plots and openings have a watering hole nearby. These breaks in the timber provide viewing opportunity for a variety of upland game.

Hunters can pursue deer, squirrel and turkey in season. Trappers with a special-use permit are welcome to take furbearers. Target practice or sight-in your firearm at the rifle range with 25-, 50- and 100-yard lanes. The new shotgun-shooting area at the end of the 1432 road gives you the chance to shoot some clay pigeons or sight-in your shotgun before turkey season. The area's few primitive, ridge-top campsites are available for use year 'round, but note that they lack water and latrines.

Springtime brings views of serviceberry, dogwood and redbud flowering to the area. As temperatures warm, a variety of birds come through, and some stay to nest for the season. Summer tanagers, red-eyed vireos, eastern wood peewees and ovenbirds are some species you might see here during spring and summer. Barred owls and various woodpeckers are also commonly sighted and heard on the area. You can find the complete list of the area's bird species at the website listed below.

To get to Flag Spring CA, travel northwest of Washburn 1.75 miles on Route UU, then go west three miles on the first public gravel road. As always, visit the area's website to catch the latest notices download the area map and brochure.

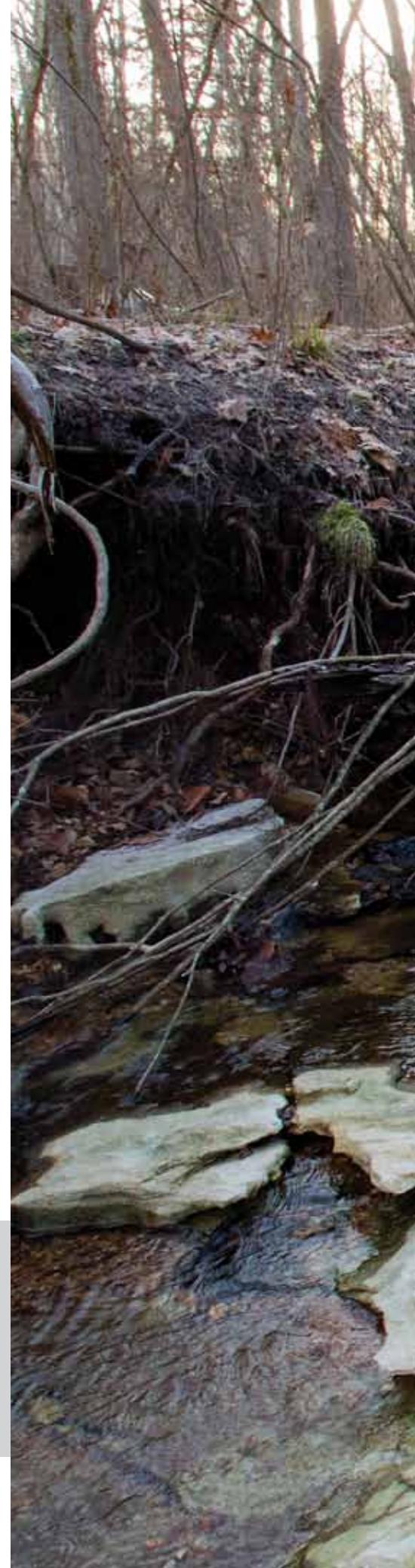
—Bonnie Chasteen, photo by David Stonner

Recreation opportunities: Bicycling, birding, camping, hiking, horseback riding, hunting and target practice

Unique features: This rugged yet beautiful upland area features oak/hickory woodlands and Flag Spring, which flows year 'round.

For More Information

Call 417-895-6880 or visit www.mdc.mo.gov/a8333.





Hunting and Fishing Calendar

FISHING OPEN CLOSE

Black Bass (certain Ozark streams, see the *Wildlife Code*)

5/28/11 2/29/12

impoundments and other streams year-round

HUNTING OPEN CLOSE

Coyote 5/09/11 3/31/12

Crow 11/01/11 3/3/12

Deer

Firearms

November 11/10/12 TBA

Rabbits 10/1/11 2/15/12

Squirrels 5/28/11 2/15/12

Turkey

Firearms

Youth 3/31/12 4/1/12

Spring 4/16/12 5/6/12

Fall 10/1/12 10/31/12

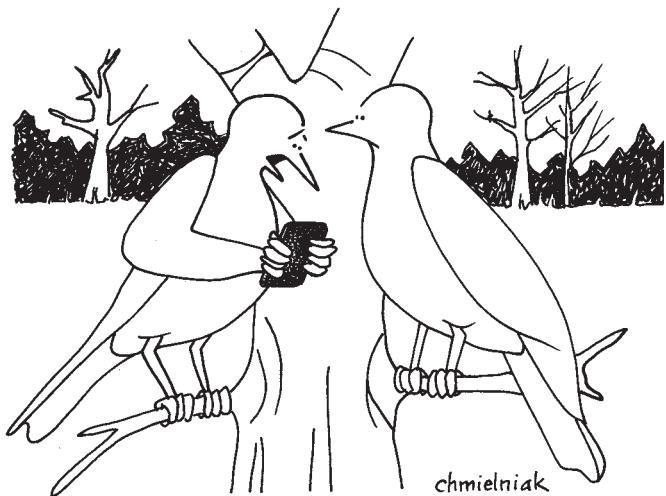
Waterfowl please see the *Waterfowl Hunting Digest* or
see mdc.mo.gov/node/3830

TRAPPING OPEN CLOSE

Beavers & Nutria 11/15/11 3/31/12

Otters & Muskrats 11/15/11 2/20/12

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* or the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, *The Spring Turkey Hunting Regulations and Information*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit mdc.mo.gov/node/130 or permit vendors.



"Everett sends me the sweetest texts, but I sure do miss his calling."

Contributors



JEFF BERNING has worked for the Missouri Department of Conservation for 25 years. He has two boys and likes to hunt and fish with them.



BRETT DUFUR, an MDC editor, is writing a history of the Department for its 75th anniversary. He has authored numerous books on Missouri's outdoors including the Katy Trail, wine country and the Lewis and Clark Trail. He lives in Rocheport with his family and loves to paddle the Missouri River and explore wild places.



CHELSEY KROESE has a deep admiration for the outdoors. She has raised Kinder goats since the age of 10 and enjoys camping, canoeing and shooting skeet. Chelsey plans to attend the University of Missouri in Columbia, where she may study biology or chemistry.



Celebrating 75 years of serving nature and you!

Check our website for 75th anniversary news, videos and events near you.

mdc.mo.gov/node/16137

Cape Girardeau Native-Plant Seminars

The Cape Girardeau County Master Gardeners will host native plant seminars at the Cape Girardeau Conservation Campus Nature Center from 8:30 a.m. to 3 p.m. March 3. Dave Tylka, author of *Native Landscaping for Wildlife and People* will be the featured speaker. Participants will have the opportunity to buy native landscaping plants from Grow Native! vendors. Registration is free and begins Feb. 1. Early registration is recommended. For more information call 573-290-5218.



United States Postal Service Statement of Ownership, Management, and Circulation

(PS form 3526, September 2007)

Published annually in the February edition of this magazine as required by the United States Postal Service.

1) Publication Title: *Missouri Conservationist* 2) Publication Number: 354-960 3) Filing Date: 11/1/11 4) Issue Frequency: monthly 5) Number of Issues Published Annually: 12 6) Annual Subscription Price: NA 7) Complete Mailing Address of Known Office of Publication: MO DEPT Of Conservation, PO BOX 180, Jefferson City, MO 65102-0180; Contact person: Shawn Cunningham; Telephone: 573-522-4115 9) Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: Publisher, MO DEPT Of Conservation, PO BOX 180, Jefferson City, MO 65102-0180; Editor, Ara Clark, PO BOX 180, Jefferson City, MO 65102-0180; Managing Editor, Nichole LeClair Terrill, PO BOX 180, Jefferson City, MO, 65102-0180 10) Owner: MO DEPT Of Conservation (Shawn Cunningham), PO BOX 180, Jefferson City, MO 65102-0180 11) Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or more of Total Amount of Bonds, Mortgages, or Other Securities: None 12) Tax Status: The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes has not changed during preceding 12 months.

Extent and Nature of Circulation	Average Number Copies Each Issue During Preceding Months	No. Copies of Single Issue Published Nearest to Filing Date
A. Total Number of Copies Printed (net press run)	556,283	
B. Paid and/or Requested Circulation		
1. Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541.	13,577	
2. Paid In-County subscriptions stated on Form 3541	0	
3. Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution	0	
4. Other Classes Mailed Through the USPS	177	
C. Total Paid and/or Requested Circulation	13,754	
D. Free Distribution by Mail, Carrier or Other Means, Samples, Complimentary and Other Free Copies		
1. Outside-County as State on Form 3541	505,504	
2. In-County as Stated on Form 3541	0	
3. Other Classes Mailed Through the USPS	0	
4. Free or Nominal Rate Distribution Outside the Mail (Carriers or other means)	0	
E. Total Free or Nominal Rate Distribution	505,504	
F. Total Distribution	519,258	
G. Copies not Distributed	2,000	
H. Total	521,258	
I. Percent Paid	2.7%	
17. I certify that all information furnished on this form is true and complete		Shawn Cunningham



Subscribe online • mdc.mo.gov/node/9087 • Free to Missouri households



I Am Conservation

MU graduate student Alicia Burke captures neotropical birds, such as the indigo bunting on her hand, in mist nets for a graduate-school research project at Current River CA. The project is also part of Missouri Forest Ecosystem Project (MOFEP). "As a biologist, understanding how and why organisms such as birds interact with the environment, and examining management practices that could help increase population numbers for declining species is very important to me. Especially to preserve these wildlife populations for the education and enjoyment of future generations." With a military background and eight years of active duty in the US Navy, Burke said she would like to merge her passion for wildlife and conservation with her military experience and become a biologist on a military base. "I feel that there is unlimited potential for public outreach and joint ventures with nonprofit organizations, state and federal agencies," said Burke. —Photo by David Stonner